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Report of the United Nations Scientific Committee on the Effects of Atomic Radiation

Fifty-eighth session
(23-27 May 2011)

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Sixty-sixth session
Supplement No. 46

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Chapter I

Introduction

1. Since the establishment of the United Nations Scientific Committee on the Effects of Atomic Radiation by General Assembly resolution 913 (X) of 3 December 1955, the mandate of the Committee has been to undertake broad assessments of the sources of ionizing radiation and its effects on human health and the environment.[1] In pursuit of its mandate, the Committee thoroughly reviews and evaluates global and regional exposures to radiation, and also evaluates evidence of radiation-induced health effects in exposed groups, including survivors of the atomic bombings in Japan. The Committee also reviews advances in the understanding of the biological mechanisms by which radiation-induced effects on health or on the environment can occur. Those assessments provide the scientific foundation used, inter alia, by the relevant agencies of the United Nations system in formulating international standards for the protection of the general public and workers against ionizing radiation;[2] those standards, in turn, are linked to important legal and regulatory instruments.

2. Exposure to ionizing radiation arises from sources such as medical diagnostic and therapeutic procedures; nuclear weapons testing; natural background radiation, including from radon; electricity generation, including by means of nuclear power; events such as the nuclear power plant accidents at Chernobyl in 1986 and following the great east-Japan earthquake and tsunami of March 2011; and occupations that increase exposure to artificial or natural sources of radiation.

[1] The United Nations Scientific Committee on the Effects of Atomic Radiation was established by the General Assembly at its tenth session, in 1955. Its terms of reference are set out in resolution 913 (X) of 3 December 1955. The Committee was originally composed of the following Member States: Argentina, Australia, Belgium, Brazil, Canada, Czechoslovakia, Egypt, France, India, Japan, Mexico, Sweden, Union of Soviet Socialist Republics, United Kingdom of Great Britain and Northern Ireland and United States of America. The membership of the Committee was subsequently enlarged by the Assembly in its resolution 3154 C (XXVIII) of 14 December 1973 to include the Federal Republic of Germany, Indonesia, Peru, Poland and the Sudan. By its resolution 41/62 B of 3 December 1986, the Assembly increased the membership of the Committee to a maximum of 21 members and invited China to become a member.

[2] For example, the international basic safety standards for protection against ionizing radiation and for the safety of radiation sources, currently co-sponsored by the International Labour Organization, the Food and Agriculture Organization of the United Nations, the World Health Organization (WHO), the International Atomic Energy Agency (IAEA), the Nuclear Energy Agency of the Organization for Economic Cooperation and Development and the Pan American Health Organization.

Chapter II

Deliberations of the United Nations Scientific Committee on the Effects of Atomic Radiation at its fifty-eighth session

3. The Committee held its fifty-eighth session in Vienna from 23 to 27 May 2011.[3] Wolfgang Weiss (Germany), Carl-Magnus Larsson (Australia) and Mohamed A. Gomaa (Egypt) served as Chair, Vice-Chair and Rapporteur, respectively.

A. Nuclear accident following the great east-Japan earthquake and tsunami in 2011

4. The Scientific Committee considered the implications of the nuclear power plant accident following the great east-Japan earthquake and tsunami of March 2011, in terms of the levels and effects of radiation. The Committee expressed its sympathy and solidarity to the Japanese people and its wish for a prompt recovery from the aftermath of those devastating natural events. It also conveyed to the Japanese scientists assessing the radiation consequences its availability to support their efforts. The Committee has extensive experience with and has published a number of reports on the appropriate scientific methodologies for assessing exposure following accidental releases. The Committee has recently published reports on the current scientific knowledge on radiation-related health effects (including at low doses and dose rates). Those could serve as a basis for assessing the radiation levels and effects attributable to the accident.

5. At the time of the session, the emergency situation was still in progress and thus a Committee report based on current information and possible effects attributable to the accident would be incomplete. In addition, there was a vast amount of environmental data that had been and would continue to be collected; that information is necessary to assess doses, and it is likely that the data from the accident will take many months to analyse. The Committee recommended that the compilation of all relevant data and information be started as soon as possible.

6. The Committee requested the secretariat to continue to actively consult, exchange information and plans, cooperate and coordinate with the various international activities related to evaluating the radiation-related consequences of the accident on people and their environment that were being performed or planned to be performed, particularly in organizations of the United Nations family, with a view to ensuring that those activities were conducted in a transparent, coherent and consistent manner, while avoiding duplication. In particular, the Committee requested the secretariat to convey to the international organizations performing activities related to the accident that they would benefit from the successful

[3] The fifty-eighth session of the Committee was also attended by observers for Belarus, Finland, Pakistan, the Republic of Korea, Spain and Ukraine, in accordance with General Assembly resolution 65/96, para. 13, and observers for the United Nations Environment Programme, WHO, the World Meteorological Organization, IAEA, the European Commission, the International Commission on Radiological Protection and the International Commission on Radiation Units and Measurements.

experience of the Committee and from its reports assessing the levels of exposure and effects attributable to the Chernobyl accident.

7. The Committee decided to carry out, once sufficient information was available, a full assessment of the levels of exposure and radiation risks attributable to the accident. It requested the representative of Japan to act as a coordinator and reference point for the Committee's Chair and secretariat on the Committee's activities on this subject. It also asked the secretariat to request relevant States members of the United Nations to provide contact information for focal points to channel relevant information.

8. The Committee envisaged a preliminary document for consideration at its fifty-ninth session, in May 2012, and a more complete report for its sixtieth session, in 2013. Another, more complete and definitive report would likely be needed several years after the accident.

9. The Committee requested the secretariat to review available and potential resources needed to accomplish the goals described above and to make any reasonable effort to secure those resources, and decided to remain seized of the topic.

B. Activities related to the Chernobyl accident

10. The Committee was mindful that 26 April 2011 had been the twenty-fifth anniversary of the accident at the Chernobyl nuclear power plant in Ukraine. The Committee took note that the secretariat had arranged for a presentation of the results of the Committee's 2008 assessment of health effects due to radiation from the Chernobyl accident at the international scientific conference entitled "Twenty-five years after the Chernobyl accident: safety for the future", held in Kyiv from 20 to 22 April 2011. The Committee also noted that the United Nations had arranged for advance publication of the 2008 assessment so that it would be available before the twenty-fifth anniversary of the accident. The Committee requested the secretariat to investigate the possibility of publishing the assessment in Russian.

11. With regard to the report with scientific annexes that it had approved in 2008,[4] the Committee noted with satisfaction that volume II, with scientific annexes entitled "Radiation exposures in accidents", "Health effects due to radiation from the Chernobyl accident" and "Effects of ionizing radiation on non-human biota", had now been published both electronically and in print. The Committee noted with satisfaction that its 2010 report had been published in six languages during the week of the session, within nine months of approval by the Committee.

C. Radiological situation in the Marshall Islands

12. The Committee took note that the General Assembly, in paragraph 14 of its resolution 65/96, had requested the Secretary-General to report to the Assembly, within existing resources, at its sixty-sixth session, regarding the effects of atomic

[4] See *Official Records of the General Assembly, Sixty-third Session, Supplement No. 46* (A/63/46).

radiation in the Marshall Islands, taking into account analysis by recognized experts, including the Scientific Committee, and previously published studies on the topic. The Scientific Committee recalled that it had assessed the radiation situation in the Marshall Islands over many decades, and agreed to offer a summary of its assessments to the Secretary-General for his report to the Assembly.

13. The Committee considered that the language of paragraph 14 of the resolution regarding the effects of atomic radiation on the Marshall Islands was not appropriate in that it appeared to be misdirected towards the Secretary-General rather than rightly to the Committee, which has competence in such matters. The Committee expressed its concern over that apparent error, which should be formally corrected by the Assembly so as not to set a precedent.

D. Present programme of work

14. In paragraph 4 of its resolution 65/96, the General Assembly encouraged the Scientific Committee at its earliest convenience to submit the reports related to its present programme of work, including on assessments of levels of ionizing radiation from electrical energy production, on effects on human health and the environment, and on the attribution of health effects to radiation exposure.

1. Ability to attribute health effects to exposure to ionizing radiation; uncertainties in risk estimates for cancer due to exposure to ionizing radiation; and biological effects of selected internal emitters

15. The Committee reviewed substantive documents on the ability to attribute health effects to exposure to ionizing radiation, uncertainties in risk estimates for cancer due to exposure to ionizing radiation and biological effects of selected internal emitters. The Committee considered that significant progress had been made on those documents and envisaged that the documents on the ability to attribute and on uncertainties could be finalized at the next session.

2. Radiation exposure from electricity generation

16. The Committee also reviewed preliminary documents on radiation exposure from electricity generation and its methodology for estimating human exposures due to discharges. The Committee noted that a review of the existing methodology had been completed and several elements were identified that needed updating, particularly for the enhanced levels of naturally occurring radioactive material associated with the use of fossil fuels. Moreover, it noted that renewable energy sources had never been assessed in a way that was comparable to the way conventional sources had been. It recognized that data were needed for conducting its assessments of radiation exposures from electricity generation and suggested that the Assembly might specifically refer to that in its resolution.

E. Future programme of work

17. Regarding its future programme of work, the Committee decided to (a) develop a report specifically on radiation risks and effects on children,

(b) evaluate epidemiological studies related to environmental sources of radiation at low dose rates and (c) review developments on mechanisms of actions at low doses.

18. The Committee took note of progress reports by the secretariat on public information and on improving the collection, analysis and dissemination of exposure data. It recognized that because of the nuclear accident in Japan, the issues of public information and data collection deserved higher priority. The Committee suggested that the General Assembly might (a) encourage Member States, the organizations of the United Nations system and other pertinent organizations to provide further relevant data about doses, effects and risks from various sources of radiation, which would greatly help in the preparation of future reports of the Committee to the General Assembly; and (b) encourage the International Atomic Energy Agency, the World Health Organization and other relevant organizations to further collaborate with the Committee secretariat to establish and coordinate the arrangements for the periodic collection and exchange of data on radiation exposures of the general public, workers and, in particular, medical patients.

F. Administrative issues

19. The Committee suggested that the General Assembly might request the United Nations Secretariat to continue to streamline the procedures for publishing the Committee's reports as sales publications, recognizing that, while maintaining quality, the timeliness of their publication was paramount to fulfil expected accomplishments approved in the programme budget, and expecting that the report ought to be published within the same year as approval.

20. The Committee noted with satisfaction that the secretariat had filled the additional Professional post at the P-4 level, which had been included in the programme budget for the biennium 2010-2011. The Committee expected that that would finally address the concern that reliance on a single post at the Professional level in the Committee's secretariat had left the Committee seriously vulnerable and had hampered the efficient execution of its approved programme of work.

21. The Committee recognized that in order to accelerate the conduct of its work, voluntary contributions to the general trust fund established by the Executive Director of the United Nations Environment Programme to receive and manage voluntary contributions to support the work of the Committee would be beneficial. Because of the need to maintain the intensity of work of the Committee and to carry out unforeseen work resulting from the nuclear accident in Japan, the Committee suggested that the General Assembly might encourage Member States to consider making voluntary contributions to the general trust fund for those purposes or to make contributions in kind.

22. The Committee agreed to hold its fifty-ninth session in Vienna from 21 to 25 May 2012.